



	Polarized targeting	Transmembrane	G1
Arabidopsis	MYGRDPWGGPIK	INTATDSATDDDRSRNINIDRAALSRP	LDVGLGCIIVSRKI
Brassica	MYGRDPWGGPIK	INTATDSATDDDRSRNINIDRAALSRP	LDVGLGCIIVSRKI
Cotton	MYGRDPWGGPIK	INTATDSATDDDRSRNINIDRAALSRP	LDVGLGCIIVSRKI
Tomato	MYGRDPWGGPIK	INTATDSATDDDRSRNINIDRAALSRP	LDVGLGCIIVSRKI
Arabidopsis	FNAQKSGKLEK	HNNVSVWRGNSGLQDGKSGTGSFVNDLVGGYVDAGDAIKFNFR	MAVMTLMSVIVISAKYEAAAGELPHVXELTKWGTDL
Brassica	FNAQKSGKLEK	HNNVSVWRGNSGLQDGKSGTGSFVNDLVGGYVDAGDAIKFNFR	MAVMTLMSVIVISAKYEAAAGELPHVXELTKWGTDL
Cotton	FNAQKSGKLEK	HNNVSVWRGNSGLQDGKSGTGSFVNDLVGGYVDAGDAIKFNFR	MAVMTLMSVIVISAKYEAAAGELPHVXELTKWGTDL
Tomato	FNAQKSGKLEK	HNNVSVWRGNSGLQDGKSGTGSFVNDLVGGYVDAGDAIKFNFR	MAVMTLMSVIVISAKYEAAAGELPHVXELTKWGTDL
Arabidopsis	DPNDHYCWMRPEDIDYPRVVECHS	CSDLAEEAEMAAALASASIVFKNKALSKLVHGA	KVYQFGRTRGRGRYSAGTAESSK
Brassica	DPNDHYCWMRPEDIDYPRVVECHS	CSDLAEEAEMAAALASASIVFKNKALSKLVHGA	KVYQFGRTRGRGRYSAGTAESSK
Cotton	DPNDHYCWMRPEDIDYPRVVECHS	CSDLAEEAEMAAALASASIVFKNKALSKLVHGA	KVYQFGRTRGRGRYSAGTAESSK
Tomato	DPNDHYCWMRPEDIDYPRVVECHS	CSDLAEEAEMAAALASASIVFKNKALSKLVHGA	KVYQFGRTRGRGRYSAGTAESSK
Arabidopsis	HAGAPWGGPIK	FENDNKL	LAGAQLLSRLALFLSPGPYEE
Brassica	HAGAPWGGPIK	FENDNKL	LAGAQLLSRLALFLSPGPYEE
Cotton	HAGAPWGGPIK	FENDNKL	LAGAQLLSRLALFLSPGPYEE
Tomato	HAGAPWGGPIK	FENDNKL	LAGAQLLSRLALFLSPGPYEE
Arabidopsis	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD
Brassica	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD
Cotton	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD
Tomato	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD
Arabidopsis	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD
Brassica	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD
Cotton	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD
Tomato	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD
Arabidopsis	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD
Brassica	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD
Cotton	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD
Tomato	REFARTQIDYILGKNPRKMS	YVGFQKYPKHVHHRGASIPKNNK	YVNCCKGGMWRD

Figure 1

Arabidopsis	1	-----MRS--LLFVLSLICFCSTALSWKKEEFKSCDQTPFCRRAR--SRTPGA--CSLIVGDSVSTIGDGLVAKLLPKAPNOGDDGQIKPLILSLSVYKDGIVRLKIDPDHSLN
potato	1	-----MRAPLLLYPULLLLLFVTSAYSKKEEPRKCDQTPFCRRAR--SRKPGS--CNLRVADSVSDGLJAKLVPEENSESEQNKKPLVLTLSVYQDGVKVKIDPDQNLN
mouse	1	MAATAAAVAARRRRSWSLSLAYLGVGLCTTLAVDRSNKTKDESSFCRQR--STRPGLSPYRALLDTLQGPDAITVHLIHEVTK-----VLIVLEIQGLQKNTRIRIDP-----LE
yeast	1	-----MRYHGICWFIQAAIIFAFGSCQCAFRRHDKTBAQDGFARNDPLAKFKQKENLWNNGIFQLNLSISYNSGVSGVFEQOS--ENGNOHQLFPFSSISFLKNDVYVWFQMDA-----
Arabidopsis	104	PPKRRFQVPDVVVSSEPEEKIWIQKVATE--TISGDTSPSSVVVSDGYEAVVRHDP--FEMVVR--PKSGDRRRRVLS
potato	106	PPKRRFQVPDVVVSSEPEEKIWIQKVATE--TISGDTSPSSVVVSDGYEAVVRHDP--FEMVVR--PKSGDRRRRVLS
mouse	108	PRRPHRYRVDVLVADPPTARLSYSGRDDNSVELTVAEGPYKIILTAQDFLLEDRSLLSNARGLMAFEHQRAPRVPPFDVKSLGSLGVMVDKIKNLFSRQSEKDPAPAGNGAQPEATP
yeast	108	--KSLEGTVEYEKNILTRRFDASTELGFNBERAEVYGKDAHLLEQTSLSLTIRYSGHRETNIVTFS-----PFKVFQFQDGEFQYV
Arabidopsis	176	LNSHGLPDPFEQLG-----RKTEGDDIWEKRTHTTDSSESEHSISIPVSVFVSDSSFYGIPEHATSPALIKPKPGVEE--SEPYRLFNLDVFEEMDHESHGGLQSGIHFMWSHGKSGKTS
potato	177	INSNGLPDPFEQLR-----EKKEGDDIWEKRTHTTDSSESEHSISIPVSVFVSDSSFYGIPEHATSPALIKPKPGVEE--SEPYRLFNLDVFEEMDHESHGGLQSGIHFMWSHGKSGKTS
mouse	228	GDGDKPEHTQOKA-----EKDEPGAKWETNKTSHSDSKYGHSTVGVLFPSLPGMEHNYCIPEHATSPALIKPKPGVEE--SEPYRLFNLDVFEEMDHESHGGLQSGIHFMWSHGKSGKTS
yeast	189	LNERHLLNMVEYVRPKSRRTPEQANGWDFTHDNFHSKEKGEPEVGLIKFVDYGNVYGVPEHTSLSLXETNNSDAG--YTEPYRLFNLDVFEEMDHESHGGLQSGIHFMWSHGKSGKTS
Arabidopsis	288	GFFWLNAEMQIDVLANGDAESG-----ISLPSHSHRIDTFWSEAGIVTIFPFVGRPEPKVWVKQJASVITTSAMQIATGHCQCKWNYKDEDAQVDSKDEHDIFHYDVLMLDIE
potato	290	GFFWLNAEMQIDVLANGDAESG-----SKMLPSDKHRIDTILWSSGSHVITTFPIGPKPKDVVQVQTSVTRPSMBOQLHATAHQCKWNYKDEDAQVDSKDEHDIFHYDVLMLDIE
mouse	334	GIFWLNAAETWIDISSNTAGTKTLFGKMLDYLOGSGETPQDIDRMSSGSHIIVLMLGHSVDFVFRQJASLTITQALPLHSLGHCQCKWNYKDEDAQVDSKDEHDIFHYDVLMLDIE
yeast	307	AVWMSNAAATWIDVEKESGP-----SPHSQSTSTHMYSESTLILALIFLGKASDVESLSALVGRPLPPLPFLSIGHHCQCKWNYKDEDAQVDSKDEHDIFHYDVLMLDIE
Arabidopsis	402	HTDGKRYFTWISVLPFPHREEMQKLLAARGKRWITVDPPIIKRDSMFJHKAATQMGYVYDSSSKIFDGMCPWPGSSSYLMLSEIRKMGGRFSYKNYVGTSTPYTWNNDMNEPSVF
potato	406	HTDGKRYFTWISVLPFPHREEMQKLLAARGKRWITVDPPIIKRDSMFJHKAATQMGYVYDSSSKIFDGMCPWPGSSSYLMLSEIRKMGGRFSYKNYVGTSTPYTWNNDMNEPSVF
mouse	454	HADGKRYFTWIPTRPQRLNMLEHLASRRKLVAIVDPPIIKRDSMFJHKAATQMGYVYDSSSKIFDGMCPWPGSSSYLMLSEIRKMGGRFSYKNYVGTSTPYTWNNDMNEPSVF
yeast	414	YASQRYFTWIKATFENEKANLEKLDSSSKLIVLDPPIIKRDSMFJHKAATQMGYVYDSSSKIFDGMCPWPGSSSYLMLSEIRKMGGRFSYKNYVGTSTPYTWNNDMNEPSVF
Arabidopsis	521	GPVVTMPRDAIHHGVVHREVHNAKGYFHMAHRSDEIVMAHEEKDPRPMTISAPILPRTORYGRITWGTNTAEHHRVSTPMIITLGLTITLSEADIGCFPGNREPELIRWYQVGAAY
potato	525	GPVVTMPRDAIHHGVVHREVHNAKGYFHMAHRSDEIVMAHEEKDPRPMTISAPILPRTORYGRITWGTNTAEHHRVSTPMIITLGLTITLSEADIGCFPGNREPELIRWYQVGAAY
mouse	573	GPVVTMLXDAHYGWEHRDIHNITGLYVHMAHRSDEIVMAHEEKDPRPMTISAPILPRTORYGRITWGTNTAEHHRVSTPMIITLGLTITLSEADIGCFPGNREPELIRWYQVGAAY
yeast	533	GPVFTSMHRDAHYGWEHRDIHNITGLYVHMAHRSDEIVMAHEEKDPRPMTISAPILPRTORYGRITWGTNTAEHHRVSTPMIITLGLTITLSEADIGCFPGNREPELIRWYQVGAAY
Arabidopsis	641	PPFRGHAIHDTIKRRKPWIFGERNTQLMREAITHRVYMYLHYFYTLAREANSSSTEVARPLMWEFGDEKSPSDEAFMWG--SGLIVQCMYTKGTTQASVWIPG--KESWVDURNKCTYVFGK
potato	645	PPFRGHAIHDTIKRRKPWIFGERNTQLMREAITHRVYMYLHYFYTLAREANSSSTEVARPLMWEFGDEKSPSDEAFMWG--SGLIVQCMYTKGTTQASVWIPG--KESWVDURNKCTYVFGK
mouse	693	PPFKAHAIHDTIKRRKPWIFGERNTQLMREAITHRVYMYLHYFYTLAREANSSSTEVARPLMWEFGDEKSPSDEAFMWG--SGLIVQCMYTKGTTQASVWIPG--KESWVDURNKCTYVFGK
yeast	653	PPFKAHAIHDTIKRRKPWIFGERNTQLMREAITHRVYMYLHYFYTLAREANSSSTEVARPLMWEFGDEKSPSDEAFMWG--SGLIVQCMYTKGTTQASVWIPG--KESWVDURNKCTYVFGK
Arabidopsis	759	THKNDAPESITAFQKAGTIIIPKDRFRSSQMDNDPMTIIVWALNSS--QPEHEEIVDDQKSFEFR--RGSTHRRFVFKGVLTSTN-----LAPPEARLSSQCLDRITILLHSSGP
potato	763	THKXVESDSTSPFOACIIIPKDRFRSSQMDNDPMTIIVWALNSS--KAREHEEIVDDQKSFEFK--QGAPILKWEAYIFQMPRLQ-----LA--VTHFPSECTVERIILLLSFGA
mouse	812	TLVLVLTSSITVFORGTTVPVWVRSSDCMKDHIIFLALNSPO--GVQGEHEIVDDQKSFEFR--RGSTHRRFVFKGVLTSTN-----LAPPEARLSSQCLDRITILLHSSGP
yeast	772	HQVNPAPLGRVEVLURGENMLITREERIRAAELTRNDPFTITIVSKIGKNGESEFUYVLDQGVTFNYK--KGEYLIRHFSYENGILLMKDSSHSPVSEKYSSSQHLKVERINYE-----E
Arabidopsis	871	KSALVEPLNQKAEIEMGLPMGGIIVASSGTXYLITRKEGVRVDDQDWTVKUL
potato	873	KTALTEPGNKVVEIELGPIFGNRS-----VPTTKKPNVRITDDWSIQIL
mouse	992	PAAVLQTKGSPESRLS--FOHDPETS-----VLILKKEGVSVASDWSIHR
yeast	887	QTRKSIKIRKIIDSEVTMDVSVDDSG-----CIENFQLFLV-----

Figure 4

